

TO-252 Plastic-Encapsulated Transistors

2SD1899-Z TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM}: 2 \text{ W (Tamb=25}^\circ\text{C)}$$

Collector current

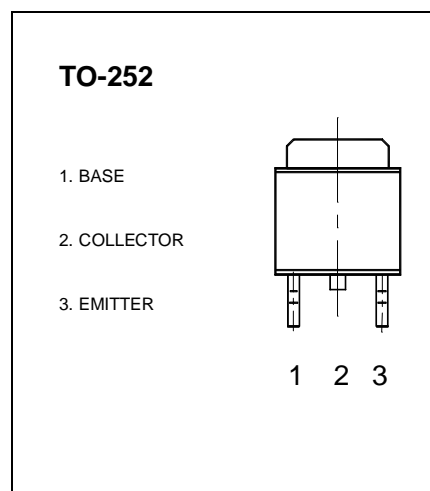
$$I_{CM}: 3 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 60 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg}: -55^\circ\text{C to } +150^\circ\text{C}$$



ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specific)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	60			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0$			10	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=200\text{mA}$	60			
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=600\text{mA}$	100		400	
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=2\text{A}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1.5\text{A}, I_B=150\text{mA}$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1.5\text{A}, I_B=150\text{mA}$			1.2	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=1.5\text{A}$		120		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		30		pF
Switching Time	Turn on Time	t_{on}		0.5		μs
	Storage Time	t_{stg}	$V_{CC}=30\text{V}, I_C=1\text{A}, I_{B1}=-I_{B2}=-0.05\text{A}$	2.0		
	Fall Time	t_f		0.5		

CLASSIFICATION OF $h_{FE(1)}$

Rank	M	L	K
Range	100-200	160-320	200-400